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NAVAL WARFARE UNDER MODERN CONDITIONS.

BY ADMIRAL S. B. LUCE, U. S. N.

THE battle of the Yalu and the battle of Lissa furnish two very striking illustrations of naval warfare under modern conditions. Both are replete with lessons applicable to naval operations of the future. The one shows how naval successes may be insured by a careful training of the *personnel* during peace ; by a study of the operations of war as conducted by the great masters of the art, and by applying the immutable principles of naval strategy to the solution of war problems as they present themselves ; the other, how a want of discipline, inattention to drills in naval tactics and gunnery, and a disregard for the most elementary principles of the science of war, must inevitably lead to disaster : while each, in its own way, demonstrates the truth that in every naval government there should reside some wise directive power whose special and exclusive duty would be to deal with the mobilization of the fleet and the direction of its military movements.

An indispensable condition in the creation of an efficient navy is the creation of the power to use it intelligently. The principal incidents in the recent naval campaign of the Japanese are still fresh in the public mind. Not so with the battle of Lissa. It may not be out of place, therefore, to recall the first collision between iron-clads and rams since the "Monitor" revolutionized the naval construction of the world. With the grand scheme for the unification of Italy, there was associated in the minds of Italian statesmen the idea of a powerful navy to guard their coast and menace Austria. "Italy," it was declared, "must be queen of the Adriatic." The entire nautical world was then feeling the full impulse of the changes in naval science wrought by the

novel creation of Ericsson, the chain armor of the "Kearsarge," the speedy sinking of the "Alabama," and the achievements of Farragut and Porter. Young Italy falling into line with the great naval powers determined to have a navy built up on the most advanced ideas, which included, of course, an iron-clad fleet. Lavish expenditures were made to that end. The sister ships "Rè d'Italia" and the "Rè di Portogallo," of 5,700 tons burden, carrying 36 guns each, and a crew of 600 men, were built by the eminent shipbuilder, Mr. Webb, of New York. The "Affondatore," monitor and ram combined, was the production of an English shipyard. In her turret she carried two 300 pounder Armstrong guns, and had a spar thirty feet long. She was over 4,000 tons burden.

These, and the "Formidabile" and "Terribile," 2,700 tons and twenty guns each, would compare favorably with iron-clads of like ratings of other navies of that day. Altogether, the Italians had, at the time to which we refer, a fleet of twelve iron-clads, six fifty-gun frigates (wooden), two sloops of war of thirty-two and twenty guns, together with gunboats and smaller craft, amounting altogether to some thirty vessels. But money could not buy organization, nor discipline, nor sea training, and these the Italian fleet lacked. Admiral Count Carlo di Persano, the commander-in-chief, was an officer of good reputation, but he does not seem to have given much attention to the higher branches of his profession, such as naval tactics and naval strategy, and was entirely wanting in the traits which inspire confidence in those under his command. The crews were raw and unskilled in gunnery, and the officers were inexperienced. Such was the fleet on which Italy rested her hopes.

In the process of the unification of Italy there remained in 1866, it will be remembered, but two principal points to be gained: the occupation of Rome and the acquisition of Venetia at that time under the dominion of Austria. On the 20th of June, Italy declared war against Austria and Bavaria; her ally, Prussia, having opened her brilliant campaign against those countries on the 18th. This was the beginning of the "Seven Weeks' War," which ended practically at Sadowa (Königgrätz), and resulted in the consolidation of the German Empire.

The Italian plan of operation, contemplated the immediate invasion of Venetia by the army; the fleet under Admiral Persano, to co-operate. But such co-operation was manifestly

impossible until there had been eliminated from the problem the Austrian naval force known to be fitting out under Admiral Tegetthoff, at Pola. This plan, however, did not meet with the approval of the king, Victor Emmanuel, and Persano was left to his own devices. General La Marmora led his army north and the King himself repaired to the seat of war. Here, on the ill-fated field of Custozza, after a long and bloody battle, on the 24th of June, the Italians were defeated by the Austrians under the Archduke Albert.

Whether the navy was to co-operate with the army or not, there can be no doubt that the true, in fact the only, objective of the Italian fleet was that of the Austrians. The destruction of that force, which alone disputed with the Italians the control of the Adriatic, was obviously the first step in a naval campaign. The attainment of this end was all the easier at the opening of hostilities, inasmuch as the mobilization of the Austrian fleet was greatly retarded by the financial embarrassments of the Imperial government and the meagre resources of the Pola Navy Yard. Instead of seeking out and destroying that force, Persano contented himself with an aimless cruise of five days, at the end of which time he returned to the Navy Yard at Ancona. Here he received a severe reprimand from the King for his want of enterprise, the latter stating that if he could not make better use of a force that had cost so many sacrifices and raised such high hopes he would be superseded. "Go and do something," said the government. "What!" exclaimed, in effect, the Minister of Marine, Depretis, who reached Ancona a few days later; "with a fleet that has added three hundred millions to our public debt, to say we cannot whip the Austrians at sea! the Austrians, whose navy we despise! Why, the people will mob us! If Tegetthoff declines battle, go and ravage the enemy's coasts. Lissa is only a short run from Ancona; capture that by a *coup de main*, and it will give you the control of the Adriatic. Do something; Custozza must be avenged!"

The plan of attacking the island of Lissa, the Gibraltar of the Adriatic, by a combined force of the fleet and a brigade of the army, was approved and immediately carried into execution. The movement commenced on the 18th of July, and after two days' bombardment, during which some damage had been done to the forts at San Giorgio, it was thought time to land the troops.

Early in the morning of the 20th the iron-clads were ordered in to engage the forts, and preparations were made for throwing a force on shore, when, all of a sudden, the lookout vessel "Esploratore" was seen approaching from the northwest with the signal aboard that the enemy's fleet was in sight. To say the Italians were taken by surprise would not be strictly true. When the island was first invested, Captain Sandri with a division of four gun-boats had been sent to Lesina to destroy the telegraphic cable connecting Lissa with Pola. In the execution of this duty there was intercepted a dispatch from Admiral Tegetthoff to the commanding officer at Lissa which ran very much like that General Sherman is said to have sent to Gen. John M. Corse: "Hold the fort for I am coming." It was clear from this that the Austrians on the main land had been notified by telegraph of the bombardment, and that the Austrian fleet was on its way to assist the forts and prevent a landing. The intercepted message was conveyed to the admiral who treated it as a ruse on the part of the enemy, and continued the work of investment. When, therefore, the signal was thrown out from the flagship "Rè d'Italia," "*Enemy in sight, prepare for action*," the great majority of the fleet was thrown into a state of consternation. Few had even so much as dreamed of such a possibility. The "Terribile" and the "Varese" had been sent to occupy the attention of the forts at Porto-Camisa, in another part of the island. The "Formidabile" which had sustained a heavy fire from the forts at San-Giorgio was transferring her wounded to the hospital ship "Washington," and was herself so badly shaken up as to oblige her to go to Ancona for repairs. The "Rè di Portogallo" and the "Castelfiardo" reported by signal injuries to their machinery; and the wooden vessels were quite unprepared for battle. In the whole fleet sixteen men had been killed and ninety-five wounded, and coal and ammunition had been liberally expended. The "Rè d'Italia," alone, had fired 1,300 shot.

Vice-Admiral Albini, in command of the wooden or reserve squadron, was ordered to re-embark the landing party, and the iron-clads were hastily formed in line abreast, each ship heading for the enemy or to the northwest. Standing on this course for a short time, signal was made to form column of ships heading northeast. This was effected by the simultaneous swinging of each ship ninety degrees to the right, thus bringing her broad-

side to the enemy. In this formation we find Rear-Admiral Vacca in command of the van division of three iron-clads; Persano in the "Rè d'Italia" in the centre, and Captain Ribotty in the "Rè di Portogallo," in command of the rear. Beyond this crude order of battle there was no plan, and none of the captains knew the intentions of the commander-in-chief. Persano *supposed* that Vice-Admiral Albini and his eight frigates would form a second line as a reserve; but the Vice-Admiral, thinking wooden vessels were not intended to cope with iron-clads, busied himself with getting together the materials that had been intended for landing. His division might as well have been at the navy yard in Ancona.

Meanwhile, the Austrian fleet was bearing down in column of divisions, each formed in double echelon, or wedge shaped, the point towards the enemy. The van was composed of seven iron-clads, the "Ferdinand Maximilian" (commonly known as the "Max") bearing the flag of Rear-Admiral Tegetthoff, leading. Astern of this at a distance of about 1,000 yards came the centre division of seven wooden ships in double echelon, the "Kaiser," an old ninety-gun ship leading. About 1,000 yards astern of the latter came the rear division of wooden gunboats in double echelon. They advanced in fine order, for Tegetthoff's plans had been carefully matured, were well known to his entire command and his drills and exercises had been incessant. The spirit which he succeeded in infusing into the *personnel* of his fleet more than made up for numerical inferiority. He had "put the iron," as Farragut said, "into the hearts of his men."

On sighting the Italians, the "Max" threw out the signals "Clear ship for action"; "Close up;" "Full speed": finally, at half past ten, "Iron-clads ram the enemy." Both sides now closed their signal books; Tegetthoff's, because his plan of battle was thoroughly understood and would be carried out; Persano's, because he had no plan.

As the shock of the collision was about to take place, the Italian Admiral shifted his flag to the "Affondatore." This necessitated stopping the "Rè d'Italia" and the centre division, leaving a gap between it and the van. Through this opening the Austrian van dashed, thus severing the Italian line. Covered by the smoke of its own fire it received no damage. Vacca, with his division, now swung around to the westward to cut off the

Austrian rear. About the same time Commodore Petz in the "Kaiser" and the division of wooden ships, stood to the southward to cut off Albini's division of wooden ships. Seeing this, Ribotty interposed with his three iron-clads. Nothing daunted, the Austrian wooden ships grappled with the Italian iron-clads and the "Kaiser" ran the "Rè di Portogallo" aboard. The shock carried away her own stern and bowsprit, bringing down the foremast and smokestack; the decks were filled with fire and smoke and, grinding alongside the iron clad, received her fire at the very muzzles of the guns. That she was not blown to pieces lends an air of probability to the story that the Italian gunners, in their excitement, fired blank cartridges! The "Kaiser," however, still firing, passed on and was met by the monitor ram "Affondatore." One touch of her spur would have proved fatal. On she came at right angles. Nothing, it seemed, could avert the old line-of-battleship's doom, when, to the surprise of all, the monitor sheered off and passed harmlessly by, receiving at close range the "Kaiser's" entire broadside. It was Persano himself who had ordered the helm put over!

The Italian van and rear being thus engaged left the centre to stand the brunt of the seven Austrian ironclads. The order had been given to "ram everything gray"—the Italian ships being lead-color, while the Austrians were black. On a sudden, by a lifting of the smoke, Tegetthoff saw right ahead a gray immovable mass. It was the "Rè d'Italia" hopelessly disabled. The order was at once telegraphed to the engine-room, "Full speed ahead," and "Prepare to back," and the 4,500 tons of the "Max," driven at a speed of eleven and a half knots, struck the Italian fair and square in the side. She listed heavily over, and then, as the "Max" backed away, righted, and in less than two minutes went down in 200 fathoms of water. Four hundred of her crew perished. The "Palestro," also of the Italian centre, was set on fire by an Austrian shell and blew up. This practically ended the fight, the Austrians being now inshore and covering Lissa, the Italians to seaward. Tegetthoff, after waiting two hours and finding the Italians indisposed to renew the battle, took his fleet into the harbor of San Giorgio. The Italian fleet returned to Ancona. Persano, being a Senator, was tried before the Italian Senate sitting as a High Court of Justice. He was acquitted of the charge of cowardice,

but found guilty of negligence and incompetency, and dismissed the service.

The object of military strategy, says Hamley, is so to direct the movements of an army that when the decisive collisions occur it shall encounter the enemy with increased relative advantage. The same may be predicated of a fleet.

The triumph of military strategy is said to be complete when the commander of one of two originally equal forces succeeds, by the combinations of the campaign, in bringing his adversary's army into a position where the chances of victory are greatly against it, and where defeat will entail disasters beyond the loss of battle. By a reversal of this principle the Italians courted defeat. Naval strategy is more comprehensive than military strategy. The latter is confined to the theatre of the war, the former may embrace all the navigable waters of a continent. Military strategy is called into play only during war. Naval strategy adopts some of its most important measures during peace, in anticipation of war. Naval strategy, in brief, has for its end "to found, support, and increase, as well in peace as in war, the sea power of a country."

In this broad acceptance of the term, the Japanese have shown themselves to be naval strategists of a high order. They had a definite naval policy, so essential to a right beginning in the building up of a navy; they created a navy in accordance with that policy; they mobilized their fleet in anticipation of hostilities, and in the waters of Korea gave a most practical demonstration that they knew how to use it.

Jomini divides the Science of War into six branches, beginning with "Diplomacy, or Statesmanship in its Relation to War." It is here where the naval strategist and the statesman at the head of a navy meet on common ground. In military governments the two are often combined in one person. But even where this obtains, the varied and exacting demands upon the time and attention of a Minister of Marine, in the transaction of the ordinary business routine of his office, are incompatible with the military duties of the naval strategist. It has been justly observed, in this connection, by one of our own Secretaries of the Navy, that "the inevitable result of throwing large executive duties upon any man is to disqualify him for council."

Therefore, to assist in the discharge of the most important

functions, those pertaining to the military branch of the department, there is generally assigned to the aid of the Minister of Marine a naval general staff, having at its head as chief an officer of rank and recognized ability. It is due to their early perception of the wisdom of such a division of labor, that the Japanese owe, to a very large extent, their recent successes. The victories of the Yalu and Wei-hai-wei were the natural fruits of a long course of preparation, which could not have been originated, and so faithfully carried on, as all accounts show them to have been, by a Minister of Marine alone, nor by a naval strategist alone, but only by the united efforts of both. It is not surprising, therefore, to find that the force of naval organization suggested by theory, and carried into practice by the great naval powers, is the one adopted in the main by Japan. It is there that will be found, most distinctly marked, the line separating the civil from the military duties of the navy department.

Although the Minister of Marine may be an admiral—as at present Admiral Marquis Saigo—yet he confines himself to the civil branch of his department, while the military duties are performed by a naval general staff having for its chief an officer of high rank and experience. Such is Count Kabayama. Under the latter comes the mobilization of the fleet, the direction of its military movements, and all that pertains to the military branch of the naval establishment. Hence their success.

Naval tactics have made little progress, as an art, since the days of Lissa. No one has yet risen to state authoritatively how the line of battle should be formed. It is still left to the Commander-in-Chief of a fleet to make his own dispositions for battle.

The habit of trusting to “the inspiration of the moment,” and of leaving everything to the “accidental ascendancy of an individual will, in an accidental grouping of officials,” is fraught with danger. It may produce a Tegetthoff or perchance a Persano; it may create a fleet like that of Ito, ready for the war that must sooner or later overtake the most peaceful nation, or one ill formed and ill found like that of the brave but unfortunate Ting.

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